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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,407	06/12/2006	Kazutomo Murakami	Q95419	6272

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EXAMINER	
WANG, JACK K	

ART UNIT	PAPER NUMBER
2612	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/596,407	MURAKAMI ET AL.	
	Examiner	Art Unit	
	JACK WANG	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 24, 2009 has been entered.

2. In the amendment filed on April 24, 2009, claims 1, 3, 6-7, 9 and 11 have been amended, claims 12-13 have been newly added and no claim has been cancelled. Therefore, claims 1-13 are currently pending for examination.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

4. Claims 1, 2, and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Inoue et al. (Pub # US 2002/0030481 A1).

Consider claim 1, Inoue et al clearly show and discloses a device (11, Fig. 1) for detecting an abnormality of a rotating body (12, Fig. 1) characterized in that the improvement comprises: means for measuring various physical quantities (wheel speed, wheel acceleration, wheel vibration, and tire pressure) (310-340, Fig. 4) of the rotating body (wheel) in rotation; means for extracting a signal which is synchronized with the rotation cycle of rotating body by

the data measured by the measuring means [0027 lines 1-6]; means for determining a condition of the rotating body from the signal extracted by the extracting means; and abnormality warning means for giving warning of abnormality when the determining means determine that the condition of the rotating body is abnormal [0053 lines 1-13]; wherein the extracting means comprise an adaptive digital (band-pass) filter which extracts a signal synchronized with the rotation cycle [0049] and picks out a signal having no correlation with the rotation cycle by means of a data measured by the measuring means and a signal synchronized with the rotation cycle extracted by the extracting means , and adapts the adaptive digital filter by means of the signal picked out and having no correlation with the rotation cycle [0050 and 0051].

Consider claim 2, Inoue et al. clearly show and discloses the device for detecting an abnormality of a rotating body, wherein the various physical quantities of the rotating body measured by the measuring means is a signal correlated with vibration, sound, rotating number or rotation (310-340, Fig. 4).

Consider claim 11, Inoue et al. clearly show and disclose a method for detecting an abnormality of a rotating body, comprising: measuring various physical quantities (wheel speed, wheel acceleration, wheel vibration, and tire pressure) (310-340, Fig. 4) of the rotating body (wheel) in rotation; extracting a signal which is synchronized with the rotation cycle of rotating body by the data measured in the measuring step [0027 lines 1-6]; determining a condition of the rotating body from the signal extracted in the extracting step; and giving warning of abnormality when it is determined that the condition of the rotating body is abnormal [0053 lines 1-13]; wherein in the extracting step, an adaptive digital (band-pass) filter extracts a signal synchronized with the rotation cycle [0049] and picks out a signal having no correlation with the

rotation cycle by means of the data measured in the measuring step and a signal synchronized with the rotation cycle extracted in the extracting step, and the adaptive digital filter is adapted by means of the signal picked out and having no correlation with the rotation cycle [0050 and 0051].

Consider claims 12 and 13, Inoute et al. clearly show and disclose the device, wherein the signal extracted by the extracting means has a cycle that is equal to the rotation cycle of the rotating body [0003].

Claim Rejections - 35 USC § 103

5. Claims 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. as applied to claim 1 above, and further in view of Brusarosco et al. (Pub # US 2007/0010928 A1).

Consider claim 3, Inoue et al. teaches similar invention except the device for detecting an abnormality of a rotating body, wherein a delayed data of the data measured by the measuring means is used in extracting a signal synchronized with the rotation cycle in the extracting means.

In the same field of endeavor, Brusarosco et al. teaches the device for detecting an abnormality of a rotating body (tire), wherein a delayed data of the data measured by the measuring means is used in extracting a signal synchronized (performed in real time) with the rotation cycle in the extracting means [0019] for the benefit of improving the data integrity and preventing the false alarm.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include a delayed data of the data measured by the measuring means is

used in extracting a signal synchronized with the rotation cycle in the extracting means as shown in Brusarosco et al., in Inoue et al. device for the benefit of improving the data integrity and preventing the false alarm.

Consider claim 4, Inoue et al. teaches similar invention except the device for detecting an abnormality of a rotating body, wherein the data delay time corresponds to one rotation time of the rotating body.

In the same field of endeavor, Brusarosco et al. teaches the data delay time corresponds to one rotation time of the rotating body [0008 lines 14-20] for the benefit of improving the data integrity and preventing the false alarm.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include the data delay time corresponds to one rotation time of the rotating body as shown in Brusarosco et al., in Inoue et al. device for the benefit of improving the data integrity and preventing the false alarm.

Consider claim 5, Inoue et al. teaches similar invention except the device for detecting an abnormality of a rotating body, wherein a delay circuit to delay the data is provided on a signal line between an input portion of data from the measuring means and an adaptive digital filter.

In the same field of endeavor, Brusarosco et al. teaches the device, wherein a delay circuit to delay the data is provided on a signal line between an input portion of data from the measuring means and an adaptive digital (low-pass) filter [0020] for the benefit of improving data integrity.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the

invention was made to include a delay circuit to delay the data is provided on a signal line between an input portion of data from the measuring means and an adaptive digital filter as shown in Brusarosco et al., in Inoue et al. device for the benefit of improving data integrity.

Consider claim 6, Inoue et al. teaches a similar invention except the device for detecting an abnormality of a rotating body, wherein a delay circuit to delay the data is provided on a signal line between an input portion of data from the measuring means and a comparator to extract a signal having no correlation with the rotation cycle.

In the same field of endeavor, Brusarosco et al. teaches the device, wherein a delay circuit to delay the data is provided on a signal line between an input portion of data from the measuring means and a comparator to extract a signal having no correlation with the rotation cycle [0006] for the benefit of determining the tire load from tire deflection.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include a delay circuit to delay the data is provided on a signal line between an input portion of data from the measuring means and a comparator to extract a signal having no correlation with the rotation cycle as shown in Brusarosco et al., in Inoue et al. device for the benefit of determining the tire load from tire deflection.

Consider claim 7, Inoue et al. teaches similar invention except the device for detecting an abnormality of a rotating body, wherein an order component generated by calculating a rotating cycle from data of rotating information among the data measured by the measuring means is used in extracting a signal synchronized with the rotation cycle in the extracting means.

In the same field of endeavor, Brusarosco et al. teaches the device, wherein an order component generated by calculating a rotating cycle from data of rotating information among the

data measured by the measuring means is used in extracting a signal synchronized with the rotation cycle in the extracting means [0007 lines 6-10] for the benefit of collecting data in various operational condition.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include an order component generated by calculating a rotating cycle from data of rotating information among the data measured by the measuring means is used in extracting a signal synchronized with the rotation cycle in the extracting means as shown in Brusarosco et al., in Inoue et al. device for the benefit of collecting data in various operational condition.

Consider claim 8, Inoue et al. teaches similar invention except the device for detecting an abnormality of a rotating body, wherein an order component generation circuit to generate the order component is provided on a signal line between an input portion of rotation information data from the measuring means and an adaptive digital filter.

In the same field of endeavor, Brusarosco et al. teaches the device, wherein an order component generation circuit to generate the order component is provided on a signal line between an input portion (32, Fig. 3) of rotation information data from the measuring means and an adaptive digital (low-pass) filter [0020] (included in the processing unit) (34, Fig. 3) [0079 lines 1-9] for the benefit of reducing the quantity of information sent out of the tire.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include an order component generation circuit to generate the order component is provided on a signal line between an input portion of rotation information data from the measuring means and an adaptive digital filter as shown in Brusarosco et al., in Inoue et

al. device for the benefit of reducing the quantity of information sent out of the tire.

Consider claim 9, Inoue et al. teaches similar invention except the device for detecting an abnormality of a rotating body, wherein the data measured by the measuring means is sampled by a variable sampling in accordance with the data of rotating speed information of the data measured by the measuring means so as to make an apparent cycle constant in extracting a signal synchronized with the rotation cycle in the extracting means.

In the same field of endeavor, Brusarosco et al. teaches the device, wherein the data measured by the measuring means is sampled by a variable sampling in accordance with the data of rotating speed information of the data measured by the measuring means so as to make an apparent cycle constant in extracting a signal synchronized with the rotation cycle in the extracting means [0045-0048] for the benefit of providing data input for determining the tire load.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include the data measured by the measuring means is sampled by a variable sampling in accordance with the data of rotating speed information of the data measured by the measuring means so as to make an apparent cycle constant in extracting a signal synchronized with the rotation cycle in the extracting means as shown in Brusarosco et al., in Inoue et al. device for the benefit of providing data input for determining the tire load.

Consider claim 10, Inoue et al. teaches similar invention except the device for detecting an abnormality of a rotating body, wherein a variable sampling circuit to perform a variable sampling is provided on the input portion of data from the measuring means.

In the same field of endeavor, Brusarosco et al. teaches the device, wherein a variable

sampling circuit to perform a variable sampling is provided on the input portion (measuring device) (32, Fig. 3) of data from the measuring means [0079 lines 7-9] for the benefit of processing signal prior to data calculation.

Therefore, it would have been obvious to a person of ordinary skill in the art at time the invention was made to include a variable sampling circuit to perform a variable sampling is provided on the input portion of data from the measuring means as shown in Brusarosco et al., in Inoue et al. device for the benefit of processing signal prior to data calculation.

Response to Arguments

6. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Ishikawas et al. (Pub # US 2006/0108170 A1) "Axle unit with slip sensor and slip measurement method".

b. Naito et al. (US Patent # 6,450,020 B1) "Tire air pressure warning device".

c. Nakao (Pub # US 2003/0065455 A1) "Method and apparatus for detecting abnormalities of tire, and program for detecting abnormalities of tire".

8. Any inquiry concerning this communication or earlier communications from the

examiner should be directed to JACK WANG whose telephone number is (571)272-1938. The examiner can normally be reached on M-F 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on 571-272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JKW/

/Daniel Wu/
Supervisory Patent Examiner, Art Unit 2612